



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,361	07/11/2001	Katsushi Saito	F-7057	5451

7590 12/19/2002  
JORDAN AND HAMBURG LLP  
122 East 42nd Street  
New York, NY 10168

EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT	PAPER NUMBER
----------	--------------

1772

DATE MAILED: 12/19/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

AS8

**Office Action Summary**

Application No.

09/903,361

Applicant(s)

SAITO ET AL.

Examiner

Christopher P Bruenjes

Art Unit

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group 1 as noted by applicant includes claims 1-18 and 26 in Paper No. 7 is acknowledged. The cancellation of non-elected claims 19-25 is also acknowledged.

### ***Information Disclosure Statement***

2. All of the art provided in the IDS was considered, however minor changes were made to the list provided on PTO-1449, such as asterisk added to patents that only an abstract was provided, and the "X" moved to the when the list stated that a translation was given while, one was not found in the material provided. Also two of the German patents were listed as Japanese patents and this has also been corrected.

### ***Specification***

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case,

Art Unit: 1772

without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. The disclosure is objected to because of the following informalities: The section titled "Cross-reference to Related Applications" is missing. The claim to a continuation-in-part of the PCT/JP00/05238 must be provided within this section of

the disclosure. Also the titles above are the preferred titles for the individual sections of the disclosure.

Appropriate correction is required.

### ***Claim Objections***

5. Claims 1 and 9 are objected to because of the following informalities: The limitation "selected from paraffinic oil and naphthenic oil whose aromatic content is less than 13%" in claim 1 or "0 to 10%" in claim 9, is grammatically confusing as to whether the limitation on the aromatic content is referring to both the paraffinic oil and the naphthenic oil or just the naphthenic oil. It is suggested by the examiner to change the limitation to read "selected from paraffinic oil and naphthenic oil wherein the aromatic content of the naphthenic oil is less than 13%" in claim 1 or "0 to 10% in claim 9. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1772

6. Claims 1-18 and 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 15, the limitation following either mineral oil or vegetable oil respectively stating "is added to the thermoplastic elastomer resin", is indefinite because it is not understood whether the limitation is a process limitation or not and what structure is defined by it. Is the oil added as a coating, a separate layer, or a mixture in the thermoplastic elastomer resin? If the oil is a mixture in the elastomer then it is suggested that the claim be written as a thermoplastic elastomer resin comprising the oil claimed.

Regarding claim 14, the limitation "measured with a B-type viscometer" renders the claim indefinite because it is not understood if the B-type viscometer is somehow present in the process oil or if the limitation is merely stating a process step for measuring the viscosity in which little patentable weight is given to processes within article claims.

***Claim Rejections - 35 USC § 102***

Art Unit: 1772

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 and 9-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Konegen et al (JP 10061783).

Konegen et al anticipate a flexible resin boot formed from a base resin material of a thermoplastic elastomer resin (p.8, 11.18-19 of translation) and having a large port and a small port that are connected with each other via a bellows there between (Fig.1). Paraffinic mineral oil is impregnated into the thermoplastic elastomer resin (p.12, 11.8-10 of translation). Paraffinic oil by definition has no aromatic content. A small amount of around of at most 5 parts by weight of the process oil is added to 100 parts by weight of the thermoplastic elastomer is inherently added because the amount impregnated only amounts to approximately 0.2mm from the surface (p.13, 11.8-10 of translation). The molecular weight of the paraffinic oil is greater than 200 (p.11, 11.26-27 of translation). The kinematic viscosity of the paraffinic oil is between 40 and 150mm<sup>2</sup>/s at 100

Art Unit: 1772

degrees Celsius, which is inherently equal to larger kinematic viscosities at 25 degrees Celsius.

8. Claims 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Takagi et al (USPN 4,967,609).

Takagi et al anticipate a flexible resin boot formed from a base resin material (see abstract) of a thermoplastic elastomer resin (col.2, 11.65-69) and having a large port and a small port that are connected with each other via a bellows (Fig.1), wherein linseed oil, which is a vegetable oil, is added to the thermoplastic elastomer resin (col.5, 11.25-26). The oil is inherently added at an amount below 5 parts by weight of vegetable oil to 100 parts by weight of the thermoplastic elastomer resin because only 3 weight parts of the anti-degradation agent is needed (col.5, 11.13-15) and the content of the anti-degradation agent within the oil is any amount greater than 5wt% (col.5, 11.27-28).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



Art Unit: 1772

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 2-8 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konegen et al (JP 10061783) in view of Berendse et al (WO 97/46618).

Konegen et al teaches all that is claimed in claim 1, but fails to explicitly teach the composition of the thermoplastic elastomer resin. However, Berendse et al teach a thermoplastic elastomer used for making a flexible resin boot for protecting drive and transmission shafts, steering columns and suspension assemblies and sealing rings (p.1, 11.15-20). New lubricants used in the joints of automobiles and elevated operating temperatures cause faster aging of sealing boots made from

Art Unit: 1772

common thermoplastic elastomer compositions (p.1, 11.29-38).

The thermoplastic elastomer that is found by Berendse et al to prevent premature leakage of lubricant under the more severe conditions with the new lubricants is a thermoplastic polyester elastomer that comprises hard segments composed of an aromatic dicarboxylic acid and a low-molecular-weight glycol, and soft segments having a molecular weight of from 500 to 3000 (p.2, 11.6-17). The hard segments are composed of alkylene diols with 2-4 carbon atoms, which includes ethylene glycol and 1,4-butanediol, and aromatic dicarboxylic acids as terephthalic acid or naphthalene dicarboxylic acid (p.3, 11.9-14). The soft segments are composed of poly(alkylene oxide) glycol, which includes poly(tetramethylene oxide) glycol and poly(propylene oxide) glycol (p.3, 11.22-25). The concentration of soft segments is between 35 and 60wt% (p.3, 11.30-32).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the applicant's invention was made to use the thermoplastic polyester elastomer of Berendse et al as the thermoplastic elastomer used in Konegen et al because the thermoplastic polyester elastomer of Berendse et al has improved flexural fatigue behavior over other thermoplastic elastomers used to form flexible resin boots, which prevents premature leakage of lubricant through cracks

Art Unit: 1772

formed in the boots under the more severe conditions with the new lubricants used in newer automobiles, as taught by Berendse et al.

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konegen et al (JP 10061783) in view of Kahoki et al (JP 10279747).

Konegen et al teaches all that is claimed in claims 1 and 9, but fails to explicitly teach a mineral oil blend of paraffin oil and naphthene oil. However, Kahoki et al teaches a mixture of paraffin oil and naphthene oil is added to a thermoplastic elastomer (p.1, paragraph 7 of translation), made up of styrene block copolymer and polypropylene (see abstract), in order to adjust the degree of hardness of the elastomer, therefore making it a more durable and flexible thermoplastic elastomer. The amount of each of the oils added would be found through routine experimentation depending on the intended degree of hardness required. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of unexpected result. One of ordinary skill in the art would have recognized that paraffin oil and naphthene oil are mixed together in order to make a more durable and flexible

Art Unit: 1772

thermoplastic elastomer by adjusting the degree of hardness, as taught by Kahoki et al.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to substitute a mixture of paraffin oil and naphthene oil to the thermoplastic elastomer for the paraffin oil of Konegen et al in order to adjust the hardness of the thermoplastic elastomer, making the boot more durable and flexible, as taught by Kahoki et al, and to mix the two oil with a paraffin content from 60 to 78% and a naphthene content from 20 to 35%, since it has been held that discovering the optimum or workable ranges involves only routine skill in the art in absence of unexpected result. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P Bruenjes whose telephone number is 703-305-3440. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 703-308-4251. The fax phone numbers for the

Art Unit: 1772


organization where this application or proceeding is assigned  
are 703-872-9310 for regular communications and 703-872-9311 for  
After Final communications.

Any inquiry of a general nature or relating to the status  
of this application or proceeding should be directed to the  
receptionist whose telephone number is 703-308-0661.

Christopher P Bruenjes  
Examiner  
Art Unit 1772

CPB

December 13, 2002

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER 12/16/02  
1772